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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,121	12/02/2003	Stefan Assmann	P03,0470	3560

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EXAMINER

SOLANKI, PARIKHA

ART UNIT	PAPER NUMBER
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3737

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/726,121	ASSMANN, STEFAN	
	<b>Examiner</b>	<b>Art Unit</b>	
	Parikha Solanki	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2003 and 03 May 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/30/2006</u> . | 6) <input type="checkbox"/> Other: _____  |

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## **DETAILED ACTION**

### ***Priority***

1. Applicant's claim for the benefit of priority from foreign application DE 10256209.1, filed under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged and accepted. Receipt is acknowledged of a certified copy of the foreign application submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 30 January 2006 was filed after the mailing date of the application for patent on 2 December 2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Objections***

3. Claim 1 is objected to because it appears to contain a typographical error. Line 3 of claim 1 recites "an overview magnetic resonance of a selected area." Examiner assumes that this claim should instead recite "an overview magnetic resonance image of a selected area." Claim 1 will be examined under this assumption for the remainder of this Office Action. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –  
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 5, and 7-12 are rejected under 35 U.S.C. 102(e) as being anticipated by DeMeester et al (US Patent No. 6,922,580).

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Regarding claims 1, 2, 7, 9, 11 and 12, DeMeester ('580) discloses a system and method for automatically determining a speed of a manually-selected region with flowing medium in an MR imaging flow measurement, including acquiring an overview image and performing a navigator echo measurement, equivalent to the scout flow measurement claimed in the instant application (Abstract, col. 4 lines 11-17, col. 3 line 24 – col. 4 line 10, Fig. 1). DeMeester ('580) also provides the steps of constructing a cardiac cycle plot based on the navigator sequence data, which includes the peak speed of the flowing medium in the selected tissue area (Fig. 2), automatically performing an optimized flow measurement dependent upon the data in the cardiac cycle plot, and subsequently displaying a speed-resolved image of the selected tissue (col. 4 lines 44 – 62, col. 5 lines 21-26).

Regarding claim 5, DeMeester ('580) discloses that the imaging is triggered by phases of the cardiac cycle (col. 2 lines 66-67).

Regarding claim 8, the cardiac cycle plot of DeMeester ('580) is equivalent to the speed profile claimed in the instant application (Fig. 2).

Regarding claim 10, DeMeester ('580) states that the selected region for imaging may be three-dimensional, which requires that the data be acquired in slices, equivalent to the plurality of tissue areas claimed in the instant application (col. 4 lines 26-30).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeMeester et al (US Patent No. 6,922,580), in view of the image processing methods known in the art at the time of invention. DeMeester ('580) discloses all features of the present invention as described above, with the exception of adding a safety margin, setting the safety margin at 10%, and acquiring 20 images per motion cycle.

Regarding claim 3, in the art of signal processing, the methods of choosing a sampling rate at or above the rate of the signal of interest are commonly known and used to avoid undersampling the signal of interest, equivalent to adding a safety margin as disclosed in the

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instant application. DeMeester ('580) also teaches that the diagnostician may set the sampling rate truncation threshold based on the flow rate in the desired imaging region (col. 4 lines 62-68). Therefore, it would have been obvious to one of ordinary skill in the art to perform the method of DeMeester ('580), further including the step of setting sampling rate higher than the peak flow rate in the desired imaging region so as to ensure the acquired flow data is accurately sampled, in view of the state of the art signal processing techniques known at the time of invention.

Regarding claim 4, Applicant does not disclose an advantage of setting the safety margin at exactly 10%. As described for claim 3, it is known in the art that the sampling rate should be set higher than the signal of interest to avoid undersampling. At the time of invention, it would have been an obvious matter of design choice to one of ordinary skill in the art to perform the modified method of DeMeester ('580) set forth above for claim 3, further including the step of setting the safety margin at 10% so as to avoid undersampling the flow data in the desired imaging region (see for further motivation DeMeester ('580), col. 3 lines 3-4).

Regarding claim 6, Applicant does not disclose an advantage or reason for acquiring exactly 20 images per motion cycle. It is known in the art of cardiac MR that, during imaging, a sufficient number of images must be acquired in order to collect a set of image data that comprehensively represents blood flow through the selected imaging region. At the time of invention, it would have been an obvious matter of design choice to one of ordinary skill in the art to perform the method of DeMeester ('580) by acquiring 20 images per cardiac cycle, in order to generate a sufficiently comprehensive image of blood flow in the selected imaging region.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parikha Solanki whose telephone number is 571.272.3248. The examiner can normally be reached on M-F, 8 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571.272.4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Parikha Solanki  
Examiner – Art Unit 3737



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